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10/585,612

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EXAMINER

HENKEL, DANIELLE B

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/585,612	Applicant(s) MIYAHARA, SEIICHIRO	
	Examiner DANIELLE HENKEL	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Summary

1. This is the initial Office action on the 10/585612 application filed on 7/11/06.
2. Claims 1-14 are pending and have been fully considered.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 5, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by TAKAMOTO (JP 07-274938).

a. With respect to claim 1, TAKAMOTO teaches a temperature control device comprising a plurality of cell parts (wells) holding microorganisms or cells (0006 and 0012, Figure 2), and a heater and cooling unit making control of temperatures inside said cell parts (0006-7), wherein said control is corrected by using an ambient temperature (0001).

b. With respect to claim 5, TAKAMOTO teaches the temperature control device further comprising a thermometer (thermocouple) measuring an ambient temperature, a storage unit storing calibration data (PID); and a control unit setting a target value for said temperatures inside said cell parts, and controlling said heater and said cooling unit with a second target value that is obtained

Art Unit: 1797

based on said target value and said calibration data in accordance with said ambient temperature (0015-20).

c. With respect to claim 9, TAKAMOTO teaches the temperature control device further comprising a thermometer (thermocouple) measuring an ambient temperature, a control unit setting a target value for said temperatures inside said cell parts; and a calculation unit (controller), wherein said calculation unit calculates a second target value from said ambient temperature and said target value, and said control unit controls said heater and said cooling unit with said second target value (0015-20).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 1797

7. Claims 2-3, 6-7, and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over TAKAMOTO (JP 07-274938) in view of SCHAPER (US 5802856).

a. With respect to claim 2, TAKAMOTO teaches the heater comprises a plurality of thermal conductors for contacting each cell part (0012, Figure 2), but does not explicitly disclose two heater lines with the plurality of thermal conductors. However, SCHAPER teaches a temperature control device in which the heater comprises a first and second line in contact with a thermally conductive plate (Column 11, lines 30-41 and Figure 17). At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the heater with a plurality of thermal conductors of TAKAMOTO to include the two heater lines contacting thermal conductors as taught by SCHAPER because it allows for independently controllable heating zones that allows for thermally cycling a substrate without requiring movement (Column 11, lines 30-41 and Column 2, lines 23-34).

b. With respect to claim 3, TAKAMOTO teaches the heater comprises a plurality of thermal conductors for contacting each cell part (0012, Figure 2), but does not explicitly disclose two heater lines with the plurality of thermal conductors. However, SCHAPER teaches a temperature control device in which the heater comprises a first and second line in contact with a thermally conductive plate (Column 11, lines 30-41 and Figure 17). SCHAPER also teaches the thermal conducting areas are controlled to different temperatures from each other by each heater line (Column 12, lines 1-13). At the time of the

Art Unit: 1797

invention it would have been obvious to one of ordinary skill in the art to modify the heater with a plurality of thermal conductors of TAKAMOTO to include the two heater lines contacting thermal conductors as taught by SCHAPER because it allows for independently controllable heating zones that allows for thermally cycling a substrate without requiring movement (Column 11, lines 30-41 and Column 2, lines 23-34).

c. With respect to claim 6, TAKAMOTO teaches the heater comprises a plurality of thermal conductors for contacting each cell part (0012, Figure 2), but does not explicitly disclose two heater lines with the plurality of thermal conductors. However, SCHAPER teaches a temperature control device in which the heater comprises a first and second line in contact with a thermally conductive plate (Column 11, lines 30-41 and Figure 17). At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the heater with a plurality of thermal conductors of TAKAMOTO to include the two heater lines contacting thermal conductors as taught by SCHAPER because it allows for independently controllable heating zones that allows for thermally cycling a substrate without requiring movement (Column 11, lines 30-41 and Column 2, lines 23-34).

d. With respect to claim 7, TAKAMOTO teaches the heater comprises a plurality of thermal conductors for contacting each cell part (0012, Figure 2), but does not explicitly disclose two heater lines with the plurality of thermal conductors. However, SCHAPER teaches a temperature control device in which

Art Unit: 1797

the heater comprises a first and second line in contact with a thermally conductive plate (Column 11, lines 30-41 and Figure 17). SCHAPER also teaches the thermal conducting areas are controlled to different temperatures from each other by each heater line (Column 12, lines 1-13). At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the heater with a plurality of thermal conductors of TAKAMOTO to include the two heater lines contacting thermal conductors as taught by SCHAPER because it allows for independently controllable heating zones that allows for thermally cycling a substrate without requiring movement (Column 11, lines 30-41 and Column 2, lines 23-34).

e. With respect to claim 10, TAKAMOTO teaches the heater comprises a plurality of thermal conductors for contacting each cell part (0012, Figure 2), but does not explicitly disclose two heater lines with the plurality of thermal conductors. However, SCHAPER teaches a temperature control device in which the heater comprises a first and second line in contact with a thermally conductive plate (Column 11, lines 30-41 and Figure 17). At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the heater with a plurality of thermal conductors of TAKAMOTO to include the two heater lines contacting thermal conductors as taught by SCHAPER because it allows for independently controllable heating zones that allows for thermally cycling a substrate without requiring movement (Column 11, lines 30-41 and Column 2, lines 23-34).

Art Unit: 1797

- f. With respect to claim 11, TAKAMOTO teaches the heater comprises a plurality of thermal conductors for contacting each cell part (0012, Figure 2), but does not explicitly disclose two heater lines with the plurality of thermal conductors. However, SCHAPER teaches a temperature control device in which the heater comprises a first and second line in contact with a thermally conductive plate (Column 11, lines 30-41 and Figure 17). SCHAPER also teaches the thermal conducting areas are controlled to different temperatures from each other by each heater line (Column 12, lines 1-13). At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the heater with a plurality of thermal conductors of TAKAMOTO to include the two heater lines contacting thermal conductors as taught by SCHAPER because it allows for independently controllable heating zones that allows for thermally cycling a substrate without requiring movement (Column 11, lines 30-41 and Column 2, lines 23-34).
8. Claims 4, 8, and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over TAKAMOTO (JP 07-274938) in view of SCHAPER (US 5802856) and further in view of BANDO (US 6626236).

- a. With respect to claim 4, TAKAMOTO teaches the heater comprises a plurality of thermal conductors for contacting each cell part (0012, Figure 2), but does not explicitly disclose two heater lines with the plurality of thermal conductors. However, SCHAPER teaches a temperature control device in which

Art Unit: 1797

the heater comprises a first and second line in contact with a thermally conductive plate (Column 11, lines 30-41 and Figure 17). At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the heater with a plurality of thermal conductors of TAKAMOTO to include the two heater lines contacting thermal conductors as taught by SCHAPER because it allows for independently controllable heating zones that allows for thermally cycling a substrate without requiring movement (Column 11, lines 30-41 and Column 2, lines 23-34). SCHAPER also teaches first and second thermometers (sensors) for one of the first and one of the second thermal conductors (Column 11, lines 51-67, Figure 21) and that each set of thermal conductors (plate regions) is equal in thermal capacity (Column 11, lines 30-41). The combination of TAKAMOTO and SCHAPER does not explicitly disclose the first and second thermal conductors being different from each other in thermal capacity. However, BANDO teaches a temperature control unit in which the heater comprises heat wires contacting thermal conductors (plate zones) that differ from each other in thermal capacity (Column 5, lines 19-33). At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the heater of TAKAMOTO and SCHAPER to include the thermal conductors differing from each other in thermal capacity as taught by BANDO because it is effective to segment the thermal conductors into zones to independently control the their temperatures (Column 2, lines 64-67).

Art Unit: 1797

b. With respect to claim 8, TAKAMOTO teaches the heater comprises a plurality of thermal conductors for contacting each cell part (0012, Figure 2), but does not explicitly disclose two heater lines with the plurality of thermal conductors. However, SCHAPER teaches a temperature control device in which the heater comprises a first and second line in contact with a thermally conductive plate (Column 11, lines 30-41 and Figure 17). At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the heater with a plurality of thermal conductors of TAKAMOTO to include the two heater lines contacting thermal conductors as taught by SCHAPER because it allows for independently controllable heating zones that allows for thermally cycling a substrate without requiring movement (Column 11, lines 30-41 and Column 2, lines 23-34). SCHAPER also teaches first and second thermometers (sensors) for one of the first and one of the second thermal conductors (Column 11, lines 51-67, Figure 21) and that each set of thermal conductors (plate regions) is equal in thermal capacity (Column 11, lines 30-41). The combination of TAKAMOTO and SCHAPER does not explicitly disclose the first and second thermal conductors being different from each other in thermal capacity. However, BANDO H teaches a temperature control unit in which the heater comprises heat wires contacting thermal conductors (plate zones) that differ from each other in thermal capacity (Column 5, lines 19-33). At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the heater of TAKAMOTO and SCHAPER to include the thermal conductors differing from

Art Unit: 1797

each other in thermal capacity as taught by BANDO H because it is effective to segment the thermal conductors into zones to independently control the their temperatures (Column 2, lines 64-67).

c. With respect to claim 12, TAKAMOTO teaches the heater comprises a plurality of thermal conductors for contacting each cell part (0012, Figure 2), but does not explicitly disclose two heater lines with the plurality of thermal conductors. However, SCHAPER teaches a temperature control device in which the heater comprises a first and second line in contact with a thermally conductive plate (Column 11, lines 30-41 and Figure 17). At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the heater with a plurality of thermal conductors of TAKAMOTO to include the two heater lines contacting thermal conductors as taught by SCHAPER because it allows for independently controllable heating zones that allows for thermally cycling a substrate without requiring movement (Column 11, lines 30-41 and Column 2, lines 23-34). SCHAPER also teaches first and second thermometers (sensors) for one of the first and one of the second thermal conductors (Column 11, lines 51-67, Figure 21) and that each set of thermal conductors (plate regions) is equal in thermal capacity (Column 11, lines 30-41). The combination of TAKAMOTO and SCHAPER does not explicitly disclose the first and second thermal conductors being different from each other in thermal capacity. However, BANDO H teaches a temperature control unit in which the heater comprises heat wires contacting thermal conductors (plate zones) that differ from each other in

Art Unit: 1797

thermal capacity (Column 5, lines 19-33). At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the heater of TAKAMOTO and SCHAPER to include the thermal conductors differing from each other in thermal capacity as taught by BANDO H because it is effective to segment the thermal conductors into zones to independently control the their temperatures (Column 2, lines 64-67).

d. With respect to claim 13, SCHAPER teaches the second heater line is provided on an outer edge side of said heater than first heater line is (Figure 17). BANDO H teaches the first and second thermal conductors include heat blocks provided for the heater lines (Column 5, lines 19-33, Figure 1).

9. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over TAKAMOTO (JP 07-274938) as applied to claims 1, 5, and 9, in view of HAGA (JP 2003-235544) and over TAKAMOTO (JP 07-274938) in view of SCHAPER (US 5802856) as applied to claims 2-3, 6-7, and 10-11 above, further in view of HAGA (JP 2003-235544) and over TAKAMOTO (JP 07-274938) in view of SCHAPER (US 5802856) and BANDO H (US 6626236) as applied to claims 4, 8, and 12-13 above and further in view of HAGA (JP 2003-235544).

a. With respect to claim 14, neither TAKAMOTO or SCHAPER or BANDO H explicitly disclose the temperature control device comprising a sensor measuring a value that varies depending on metabolism. However, HAGA teaches a temperature control device that comprises a sensor for each cell part that

Art Unit: 1797

measures a measurement value that varies depending on metabolism of said microorganisms or cells (0013-0015). At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the temperature control device of TAKAMOTO, or TAKAMOTO and SCHAPER, or TAKAMOTO, SCHAPER and BANDO, to include the sensor as taught by HAGA because it allows for maintaining the inside of a culture environment in optimal conditions for cultivating a cell (0002, 0010).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIELLE HENKEL whose telephone number is (571)270-5505. The examiner can normally be reached on Mon-Thur: 11am-8pm, Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1797

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/William H. Beisner/
Primary Examiner, Art Unit 1797

/DANIELLE HENKEL/
Examiner, Art Unit 1797